IN THE CLAIMS:

Please amend claims 1-21 as shown in the complete list of claims that is presented below.

1. (currently amended) A method for the continuous real time tracking of the position of ~~at least one~~ a plurality of mobile ~~object~~ objects in a defined multidimensional space, comprising:

attaching ~~at least one~~ mobile transmitter ~~module which is attached~~ modules to ~~at least one~~ the mobile ~~object of the system that is to be analyzed~~ objects;

receiving ~~and whose~~ signals ~~are received~~ from the transmitter modules by a stationary receiving and signal processing network; and

~~and are processed~~ processing the received signals centrally,

wherein the signals emitted by ~~the at least one~~ transmitter modules are electromagnetic waves which are transmitted within a frequency band range utilizing a time division ~~multiplex~~ multiplexing technique,

~~characterized in that the~~ wherein an available frequency band is used as a single channel ~~for the purposes of maximizing the~~ in order to maximize accuracy of ~~the~~ position ~~detecting process,~~ detection,

~~and in that the~~ wherein a communication process between ~~the~~ transmitters ~~(S, Sp, Sb)~~ in the transmitter modules and ~~the~~ receivers ~~(E1,..., En)~~ of the receiving and signal processing network is based on ~~the~~ a principle of pseudo-random time division ~~multiplex~~ multiplexing using non synchronized pseudo-random patterns, and

~~in that the~~ wherein the transmitters of the transmitter modules emit transmission signals in ~~the different~~ burst transmissions ~~(B)~~ that are characterized by a low cross correlation.

2. (currently amended) A method in accordance with Claim 1, ~~characterized in that~~ wherein the principle of pseudo-random time division ~~multiplex~~ multiplexing comprises ~~the processes~~ a process of transmitting ~~(S, Sp, Sb)~~ at isolated, irregular time points, whereby each transmitter ~~(S, Sp, Sb)~~ uses a different pseudo-random sequence for the transmitting time point.

3. (currently amended) A method in accordance with Claim 1, ~~characterized in that~~ wherein the receivers ~~(E1,..., En)~~ estimate the time point of the next burst transmission ~~(B)~~ from a certain transmitter ~~(S, Sp, Sb) in the knowledge of~~ based on the pseudo-random time division ~~multiplex~~ multiplexing and the ~~known~~ pseudo-random pattern.

4. (currently amended) A method in accordance with Claim 3, ~~characterized in that~~ wherein only those signals are evaluated by the receiving and signal processing network which arise at the predetermined time point of the next burst transmission ~~(B)~~.

5. (currently amended) A method in accordance with Claim 3, ~~characterized in that the process of predetermining~~ wherein the next burst transmission from ~~a~~ the certain transmitter ~~(S, Sp, Sb)~~ is ~~effected~~ determined continuously.

6. (currently amended) A method in accordance with Claim 1, ~~characterized in that~~ wherein the transmitter modules are ~~miniaturized in such a manner that they are adapted~~ miniaturized, at least one of the transmitter modules being small enough to be inserted ~~even~~ into a ball.

7. (currently amended) A method in accordance with Claim 1, ~~characterized in that~~ wherein the frequency band range lies at approximately 2.4 GHz.

8. (currently amended) A method in accordance with Claim 1, ~~characterized in that~~ wherein the frequency band range has a bandwidth of 80 MHz.

9. (currently amended) A method in accordance with Claim 1, ~~characterized in that~~ wherein the receiving and signal processing network comprises stationary reference transmitters ~~(R1, ..., Rn)~~ that are used as position references for the purposes of minimizing errors and for ~~the~~ calibration of the ~~system,~~ positions of the transmitter modules, said reference transmitters transmitting an identification code in a ~~sequence in like manner to the at least one mobile transmitter (S, Sp, Sb) for the at least one~~

~~moving object that is to be analyzed, and~~ sequence, the signals from said reference transmitters being detected by ~~the~~ receivers ~~(R1, ..., Rn)~~ of the receiving and signal processing network for ~~the~~ purposes of determining their time of arrival at the respective receivers.

10. (currently amended) A method in accordance with Claim 9, ~~characterized in that~~ wherein the reference transmitters are synchronized over ~~cables, preferably, glass fiber~~ cables.

11. (currently amended) A method in accordance with Claim 1, ~~characterized in that~~ wherein the burst transmissions ~~(B)~~ are sent utilizing non synchronized pseudo-random patterns which are a combination of ~~the~~ access mechanisms, time division ~~multiplex~~ multiplexing, and code division ~~multiplex.~~ multiplexing.

12. A method in accordance with Claim 1, ~~characterized in that~~ wherein the pseudo-random patterns are prime number sequences.

13. (currently amended) A method in accordance with Claim 1, ~~characterized in that,~~ wherein in the case of the burst transmissions ~~(B), the~~ a separation of at least two signals of different origin arriving randomly at the same time is effected by ~~the~~ a receiver of the receiving and signal processing network.

14. (currently amended) A method in accordance with Claim 1, ~~characterized in that~~ wherein the burst transmissions ~~(B)~~ are transmitted at a pulse rate which is so high that undetected individual values are tolerated.

15. (currently amended) A method in accordance with Claim 1, ~~characterized in that~~ ~~the~~ wherein non synchronized burst transmissions ~~(B)~~ from the ~~at least one mobile~~ transmitter ~~module of the transmitters (S, Sp, Sb)~~ modules are ~~adapted to be~~ synchronized ~~by a receiver module in the~~ with the aid of receivers in the transmitter ~~(S, Sp, Sb)~~ modules in order to reduce the probability of overlaps when there are many ~~transmitters.~~ transmitter modules.

16. (currently amended) A method in accordance with Claim 1, ~~characterized in that~~ ~~the analogue reception~~ wherein the receiving and signal processing network comprises means for receiving analog signals, ~~received at the HF front end are digitized in an evaluating unit, and the~~ digitizing the received signals, and determining and storing time points, at which the signals from ~~the~~ respective ~~transmitters (S, Sp, Sb)~~ transmitter modules are received~~, are determined and stored~~.

17. (currently amended) A method in accordance with Claim 1, ~~characterized in that~~ wherein different algorithms can be used by the receiving and signal processing

network for the processing of ~~the~~ received and stored signals in ~~dependence on the situation.~~ different situations.

18. (currently amended) A method in accordance with Claim 17, ~~characterized in that the signal is divided into, possibly overlapping,~~ wherein the receiving and signal processing network comprises means for dividing received signals into sections for ~~the~~ processing of the received signals, and the best respective algorithm or a plurality of algorithms are used simultaneously for the individual sections.

19. (currently amended) A method in accordance with Claim 17, ~~characterized in that the signal is divided into, possibly overlapping,~~ wherein the receiving and signal processing network comprises means for dividing received signals into sections for ~~the~~ processing of the received signals, and a rotated time axis is also used for individual sections so that ~~e.g.~~ discontinuities in highly dynamic processes are approached from two sides.

20. (currently amended) A ~~device~~ system for transmitting electromagnetic waves for use in a method for ~~the~~ continuous real time tracking of the position of ~~at least one~~ mobile ~~object~~ objects in a defined multidimensional space, comprising:

[[-]] ~~at least one mobile~~ a plurality of transmitter ~~module~~ modules which ~~is~~ are attached to ~~at least one~~ the mobile ~~object in the system that is to be analyzed,~~ objects; and

[[-]] ~~including~~ a stationary receiving and signal processing network for receiving and processing ~~the~~ signals ~~which are~~ transmitted by the transmitter modules, said signals being waves which are transmitted in a frequency band range using a time division ~~multiplex~~ multiplexing technique,

~~characterized in that there are provided communication means which carry out~~ wherein a transmission process is carried out between the ~~transmitters~~ transmitter modules and the ~~receivers~~ receiving and signal processing network in ~~the~~ an available frequency band serving as a single channel using ~~the principle of~~ pseudo-random time division ~~multiplex~~ multiplexing with non synchronized pseudo-random patterns, and

~~in that there are provided~~ wherein the transmitter modules comprise transmitter means ~~which transmit the transmission~~ for transmitting signals in ~~the form of~~ different burst transmissions ~~(B)~~ having a low cross correlation.

21. (currently amended) A ~~device~~ system in accordance with Claim 20, ~~characterized in that~~ further comprising reference transmitters ~~(R1,..., Rn) are provided with~~ that receive trigger and clock pulse signals ~~which are fed in~~ from the receiving and signal processing network.